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Appraisal

Critically Appraised Papers

Tai Chi improves balance and prevents falls in people with Parkinson's disease

Synopsis

Summary of: Gao Q, Leung A, Yang Y, Wei Q, Guan M, Jia C, He C. Effects of Tai Chi on balance and fall prevention in Parkinson's disease: a randomized controlled trial. *Clin Rehabil* 2014;28: 748–753.

Question: Does Tai Chi improve balance and functional mobility, and prevent falls in people with Parkinson's disease? ***Design***: Randomised, controlled trial with blinded outcome assessment. ***Setting***: A hospital and local community in China. ***Participants***: Adults aged over 40 years with idiopathic Parkinson's disease who were independently mobile and had fallen during the past year. Randomisation allocated 40 participants to the Tai Chi group and 40 to the control group. ***Interventions***: Both groups received usual medical treatment. The intervention group participated in Yang style Tai Chi, which emphasises diagonal weight shifts, awareness of body position and breathing. An experienced instructor guided the participants through three 60-minute sessions per week for 12 weeks. The control group undertook no Tai Chi exercise. ***Outcome measures***: At the end of the intervention period, the Berg Balance Scale (BBS), the Unified Parkinson's Disease Rating Scale (UPDRS) III and the Timed Up and Go (TUG) test were assessed. Over the subsequent 6 months, falls were assessed via a falls diary and monthly phone calls. ***Results***: Seventy-six participants completed the study. BBS scores improved significantly more in the Tai Chi group, by 3.8 points (95% CI 2.3 to 5.3). The UPDRS scores didn't differ significantly. Change in TUG time was significantly better in the Tai Chi group, by 1.4 seconds (95% CI 0.9 to 2.0). Tai Chi reduced the relative risk of falls significantly, to 0.44 (95% CI 0.22 to 0.89). ***Conclusion***: Three months of Tai Chi improved balance and decreased the incidence of falls in people with Parkinson's disease.

[95% CIs calculated by the Editor using data from the published paper. Note that the TUG result is statistically significant, but it was not significant in the published paper. This may have been due to slight differences in the equations that were used.]

Mark Elkins
Editor, Journal of Physiotherapy

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Commentary

The major finding of this trial was that 3 months of Tai Chi improved balance and decreased the incidence of falls in people with Parkinson's disease. A recent systematic review about the effects of Tai Chi in Parkinson's disease[1] found similar results; however, the pooled estimate of the effect on functional mobility was lower than that reported by Gao et al. Therefore, this trial is a useful addition to this field of study.

Unfortunately, the authors did not describe in detail the traditional Chinese mind-body exercises that they used, thus making it difficult to replicate in clinical practice. To apply such exercises in a clinical setting would require an experienced instructor, which may be expensive or unfeasible in some countries.

Tai Chi appears to have complementary benefits to some other physiotherapy interventions for Parkinson's disease.[2] In a recent systematic review,[2] the effect of treadmill training on balance was twice that reported for Tai Chi by Gao et al, where the mean estimate and 95% CI did not exceed 10% of the Berg Balance Scale range from 0 (high falls risk) to 56 (low falls risk).[3] The effect of Tai Chi on the Timed Up and Go test reported by Gao et al was similarly small and of borderline statistical significance. The effects of exercise or general physiotherapy on the Unified Parkinson's Disease Rating Scale are significant,[2] which is again in contrast to Tai Chi in the Gao study. The beneficial effects of resistance training on strength, mobility and functional performance in this population have also been demonstrated.[4] However, the effect of Tai Chi on falls is arguably clinically worthwhile; for every four people (95% CI 2 to 18) who undertake Tai Chi, one person avoids a fall who otherwise would have fallen.

These mainly complementary benefits suggest that people with Parkinson's disease may benefit from a combination of Tai Chi and other physiotherapy interventions. Studies that address adherence and satisfaction with Tai Chi could help with the clinical decision-making.

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